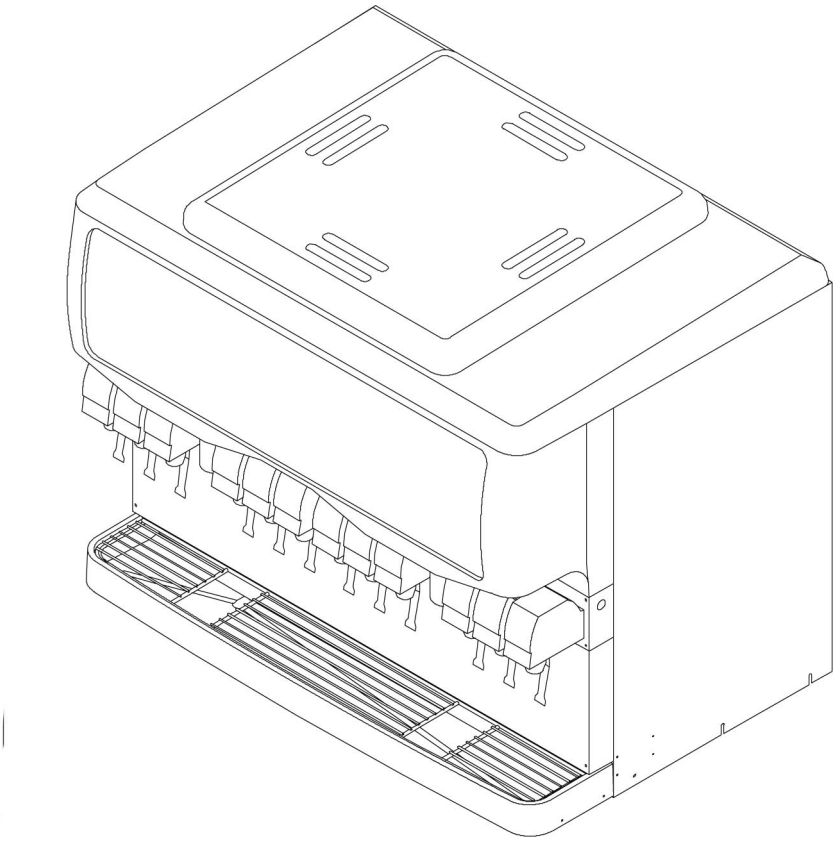
INSTALLATION MANUAL
ICE/BEVERAGE DISPENSER
MODEL: ED 300 BC



Release Date: March 25, 2004
Publication Number: 92166INS
Revision Date: August 3, 2010
Revision: E

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The products, technical information, and instructions contained in this manual are subject to change without notice. These instructions are not intended to cover all details or variations of the equipment, nor to provide for every possible contingency in the installation, operation or maintenance of this equipment. This manual assumes that the person(s) working on the equipment have been trained and are skilled in working with electrical, plumbing, pneumatic, and mechanical equipment. It is assumed that appropriate safety precautions are taken and that all local safety and construction requirements are being met, in addition to the information contained in this manual.

This Product is warranted only as provided in Cornelius' Commercial Warrant applicable to this Product and is subject to all of the restrictions and limitations contained in the Commercial Warranty.

Cornelius will not be responsible for any repair, replacement or other service required by or loss or damage resulting from any of the following occurrences, including but not limited to, (1) other than normal and proper use and normal service conditions with respect to the Product, (2) improper voltage, (3) inadequate wiring, (4) abuse, (5) accident, (6) alteration, (7) misuse, (8) neglect, (9) unauthorized repair or the failure to utilize suitably qualified and trained persons to perform service and/or repair of the Product, (10) improper cleaning, (11) failure to follow installation, operating, cleaning or maintenance instructions, (12) use of "non-authorized" parts (i.e., parts that are not 100% compatible with the Product) which use voids the entire warranty, (13) Product parts in contact with water or the product dispensed which are adversely impacted by changes in liquid scale or chemical composition.

Contact Information:

To inquire about current revisions of this and other documentation or for assistance with any Cornelius product contact:

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SAFETY INSTRUCTIONS

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

Safety Overview

- Read and follow **ALL SAFETY INSTRUCTIONS** in this manual and any warning/caution labels on the unit (decals, labels or laminated cards).
- Read and understand ALL applicable OSHA (Occupational Safety and Health Administration) safety regulations before operating this unit.

Recognition

Recognize Safety Alerts
 This is the safety alert symbol. When you see it in this manual or on the unit, be alert to the potential of personal injury or damage to the unit.

DIFFERENT TYPES OF ALERTS

DANGER:
Indicates an immediate hazardous situation which if not avoided **WILL** result in serious injury, death or equipment damage.

WARNING:
Indicates a potentially hazardous situation which, if not avoided, COULD result in serious injury, death, or equipment damage.

CAUTION:
Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury or equipment damage.

SAFETY TIPS

- Carefully read and follow all safety messages in this manual and safety signs on the unit.
- Keep safety signs in good condition and replace missing or damaged items.
- Learn how to operate the unit and how to use the controls properly.
- **Do not** let anyone operate the unit without proper training. This appliance is **not** intended for use by very young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.
- Keep your unit in proper working condition and do not allow unauthorized modifications to the unit.

QUALIFIED SERVICE PERSONNEL

WARNING:
Only trained and certified electrical, plumbing and refrigeration technicians should service this unit. **ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES. FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

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Safety Precautions

This unit has been specifically designed to provide protection against personal injury. To ensure continued protection observe the following:

WARNING:
Disconnect power to the unit before servicing following all lock out/tag out procedures established by the user. Verify all of the power is off to the unit before any work is performed.

Failure to disconnect the power could result in serious injury, death or equipment damage.

CAUTION:
Always be sure to keep area around the unit clean and free of clutter. Failure to keep this area clean may result in injury or equipment damage.

Shipping And Storage

CAUTION:
Before shipping, storing, or relocating the unit, the unit must be sanitized and all sanitizing solution must be drained from the system. A freezing ambient environment will cause residual sanitizing solution or water remaining inside the unit to freeze resulting in damage to internal components.

CO_2 (CO_2 Carbon Dioxide) Warning

DANGER:
CO_2 displaces oxygen. Strict attention **MUST** be observed in the prevention of CO_2 gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, particularly in a small area, **IMMEDIATELY** ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentrations of CO_2 gas experience tremors which are followed rapidly by loss of consciousness and **DEATH**.

Mounting in or on a Counter

WARNING:
When installing the unit in or on a counter top, the counter must be able to support a weight in excess of **730** lbs. to insure adequate support for the unit. **FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

NOTE: Many units incorporate the use of additional equipment such as icemakers. When any addition equipment is used you must check with the equipment manufacturer to determine the additional weight the counter will need to support to ensure a safe installation.

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DESCRIPTION

The “ENDURO” series of ice dispensers solves your ice and beverage service needs in a sanitary, space saving, economical way. Designed to be manually filled with ice from any remote ice-making source, these dispensers will dispense cubes (up to 1-1/4 inch in size), cubelets, and hard-chipped or cracked ice. In addition, several flavors of post-mix beverages. “BC” units include beverage faucets and a cold plate and are designed to be supplied direct from syrup tanks and carbonator, with no additional cooling required.

SPECIFICATIONS

Model Descriptions:	ED300(Ice only) B=(Beverage Faucets) BC=(Faucets andCold Plate) Z=(No Drip) F=(Flavor Option)
Ice Storage:	300 lbs
Maximum number of Faucets Available	12
Built-in Cold Plate:	Yes, on BC models only
Electrical:	120/1/60Hz, 5.2 Amps Total Unit Draw 220-240/1/50/60 Hz, 4.0 Amps Total Unit Draw
Dimensions ED 150:	44-3/8 in. Wide X 31-1/2 in. Deep X 37 in. High Z model = 44-3/8 in. Wide X 23-1/16 in. Deep X 37 in. High

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INSTALLATION INSTRUCTIONS

INSTALLATION

WARNING:
TO THE INSTALLER.

It is the responsibility of the Installer to ensure that the water supply to the dispensing equipment is provided with protection against backflow by an air gap as defined in ANSI/ASME A112. 1.2-1979; or an approved vacuum breaker or other such method as proved effective by test and must comply with all federal state and local codes, failure to comply could result in serious injury, death or damage to the equipment.

Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed, and maintained according to Federal, State, and Local laws.

1. Locate the dispenser indoors on a level counter top.

   A. LEG OPTION, Kit P/N 08017

NOTE: Before Installing legs, the plastic plugs (6) in the base threaded holes must be removed.

Unpack the four (4) legs and install them into the threaded holes provided in the bottom of the unit. The installer must provide flexibility in the product and utility supply to permit shifting the position of the dispenser sufficiently to clean the area beneath it.

B. COUNTER MOUNTING

The ice dispenser must be sealed to the counter. The template drawing (see Figure 3) indicates where openings can be cut in the counter. Locate the desired position for the dispenser, then mark the outline dimensions on the counter using the template drawings. Cut openings in counter.

Apply a continuous bead of *NSF International* (NSF) silastic sealant (Dow 732 or equal) approximately 1/4--inch inside of the unit outline dimensions and around all openings. Then, position the unit on the counter within the outline dimensions. All excess sealant must be wiped away immediately.

2. The beverage tubes, drain tube and power cord are routed through the large opening in the bottom of the unit. See the MOUNTING TEMPLATE (Figure 3 or 4) for locating the required clearance opening in the counter for these utility lines.

3. DRIP TRAY DRAIN ASSEMBLY (see Figure 5): Route the drain tube to an open drain with the end of the tube above the “flood” level of the drain. Use the tubing, fittings, clamps, and insulation provided with the Dispenser to assemble the drain. The completed drain line *must* pitch continuously downward and contain no “traps” or improper drainage will result.

4. Connect the beverage system product tubes as indicated in the Beverage System Schematic. This workshould be done by a qualified service person.

NOTE: See applicable Plumbing Diagram (see Figure 6, 7, 8, or 9) or Decal on the lower front panel of the unitfor the location of syrup and water connections.

5. Clean the hopper interior (see CLEANING INSTRUCTIONS in Owner’s Manual).

WARNING:
This unit must be grounded to aviod possiable fatal electrical shock or serious injury to the opertor. The unit power card is equiped with a three prong plug. if a Three-hole (grounded) outlet is not avilable and use an approved method to ground the unit. Failure to comply could result in serious injury, death or damage to the equipment.

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6. Connect the power cord to a 120 volt, 60 cycle, 3-wire grounded receptacle. For 220--240 volt International units, a 3--wire power cord is provided. An adapter plug for the particular country will need to be provided by the Installer.

7. Maximum and minimum ambient temperature rating for correct operation is 40 to 105 F

8. The dispenser is not designed for a wash down environment and must not be placed in an area where a water jet could be used.

9. The uint has to be placed in a horizontal position.

10. If the supply cord is damaged, it must be replaced by the manufacturer, it's service agent or similarly qualified person in order to avoid a hazard.

ADJUST WATER -TO-SYRUP RATIO

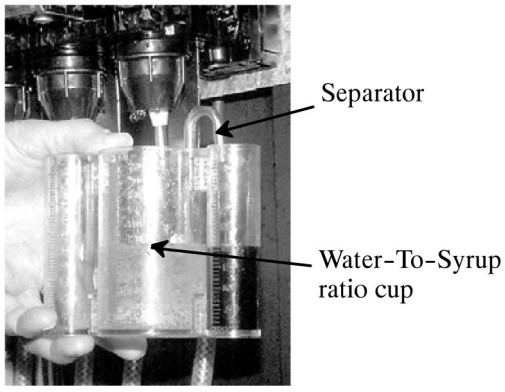

Figure 1

1. Remove valve cover and install syrup separator over the difiuser and throug the nozzle.
2. Hold cup under valve and dispenser beverage for a specific time (i.e. 2 seconds)
3. NOTE: water and syrup must be cold before checking ratios.
4. Adjust carbonated water flow to the desired rate (such as 90 to 100 ml (3 to 3.75 oz.) per second). Turn the flow adjuster 1/4 of a turn at a time and recheck the flow. To increase reading turn clockwise.
5. Set a syrup flow adjuster to get the desired ratio.
6. Test the valve and adjust until a consistent ratio is delivered three consecutive times.
7. Repeat procedure for other valves.

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GATE RESTRICTOR PLATE

CAUTION:
Disconnect power to dispenser before installing, removing oradjusting restrictor. See safety section of this manual.

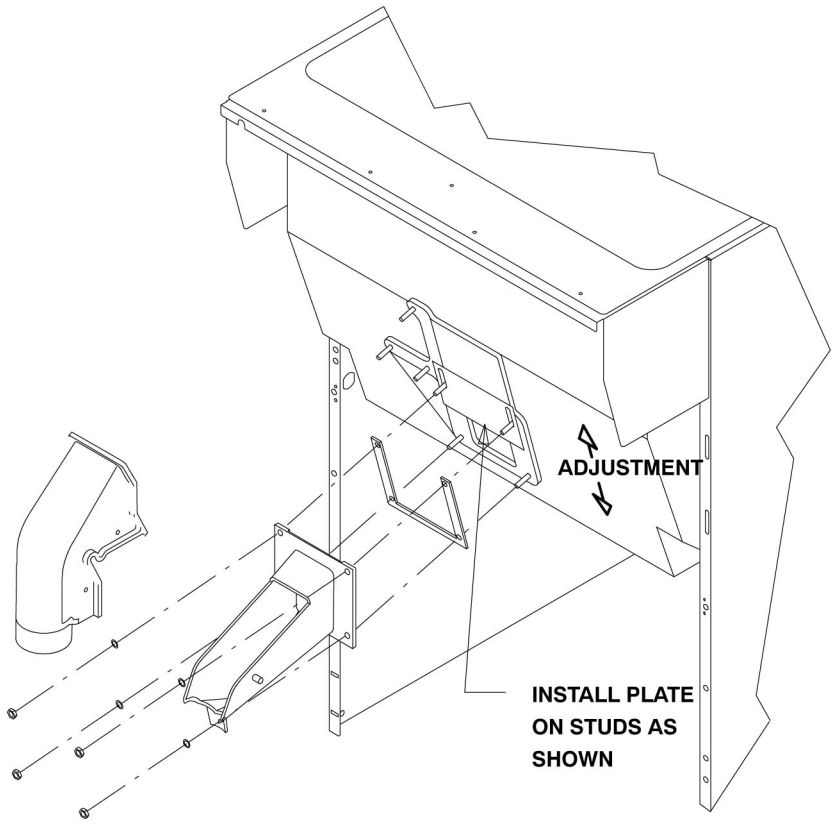

Figure 2. GATE RESTRICTOR PLATE

ADJUSTMENT

This plate may be adjusted as shown to reduce or increase the dispensing rate of ice, especially desirable when using glasses or other containers with small openings. Adjustment can be made by sliding up or down with nuts loosened, to obtain the desired amount of restriction.

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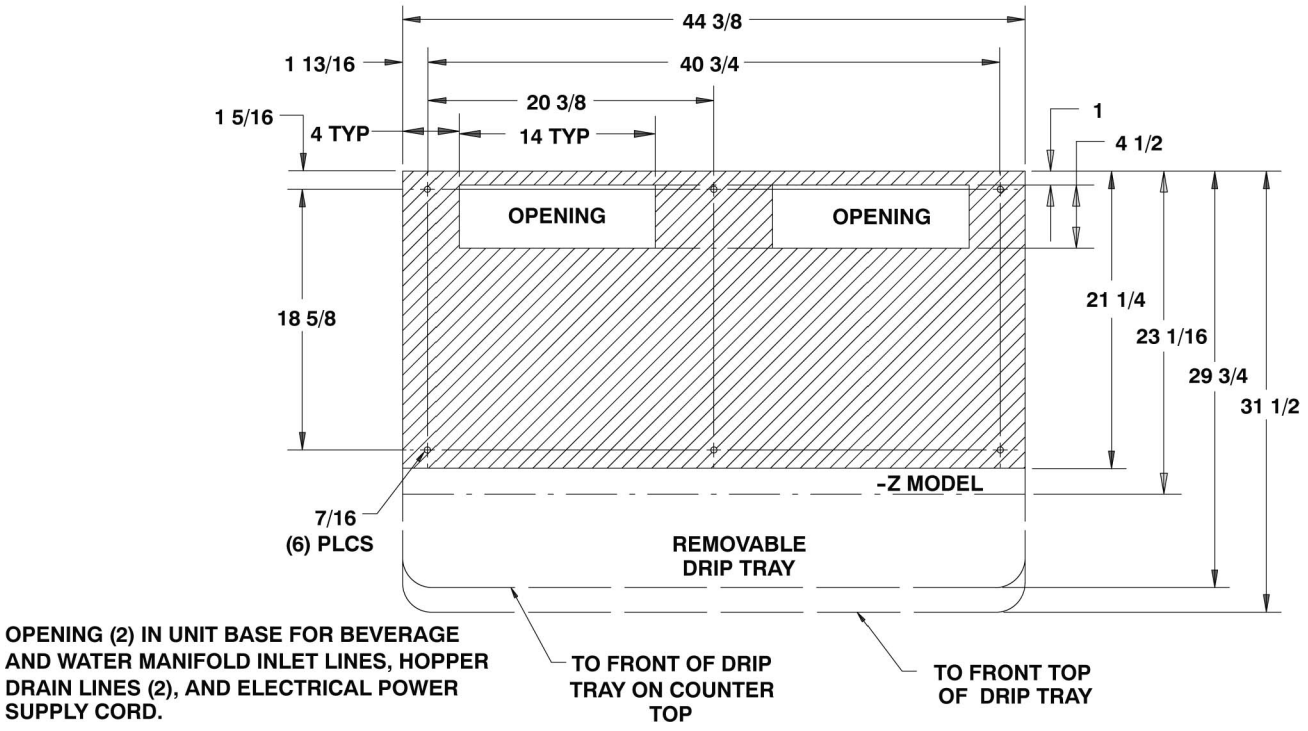

Figure 3. Mounting Template (Ice only-B Models)

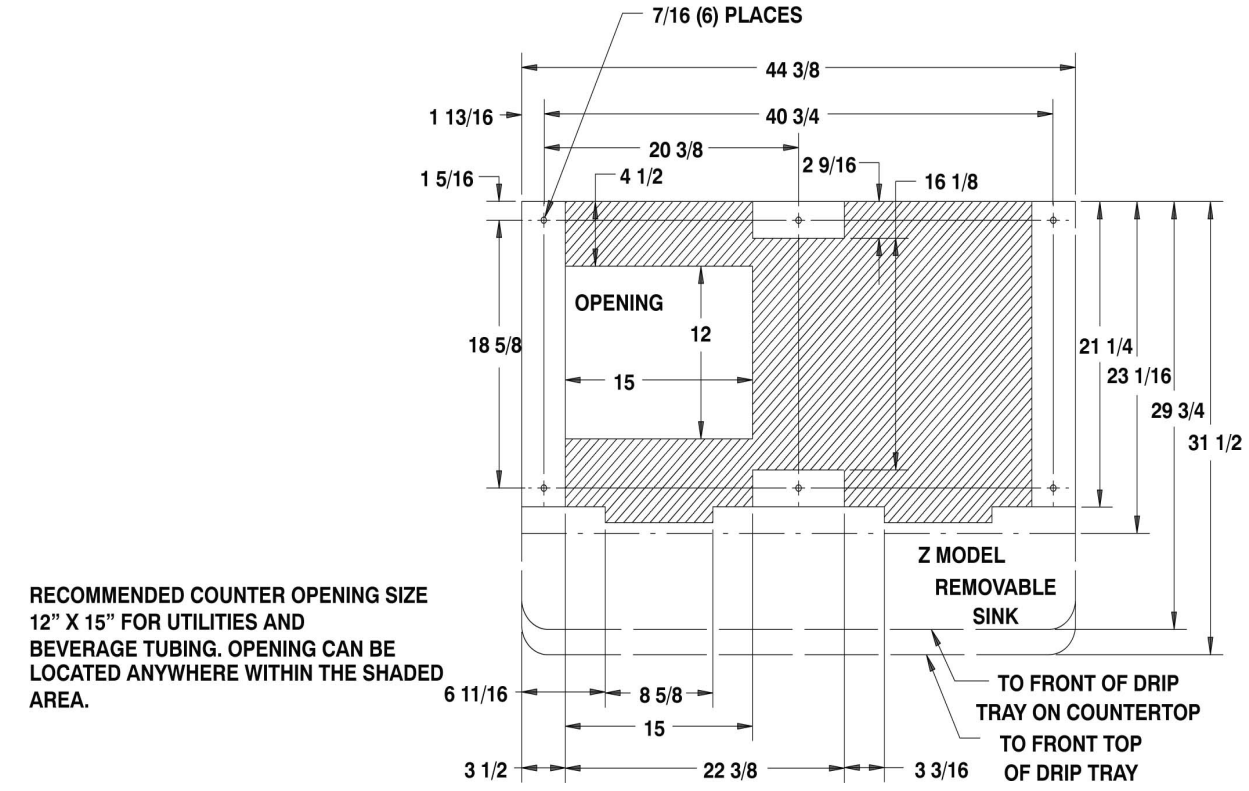

Figure 4. Mountin Template (BC Models)

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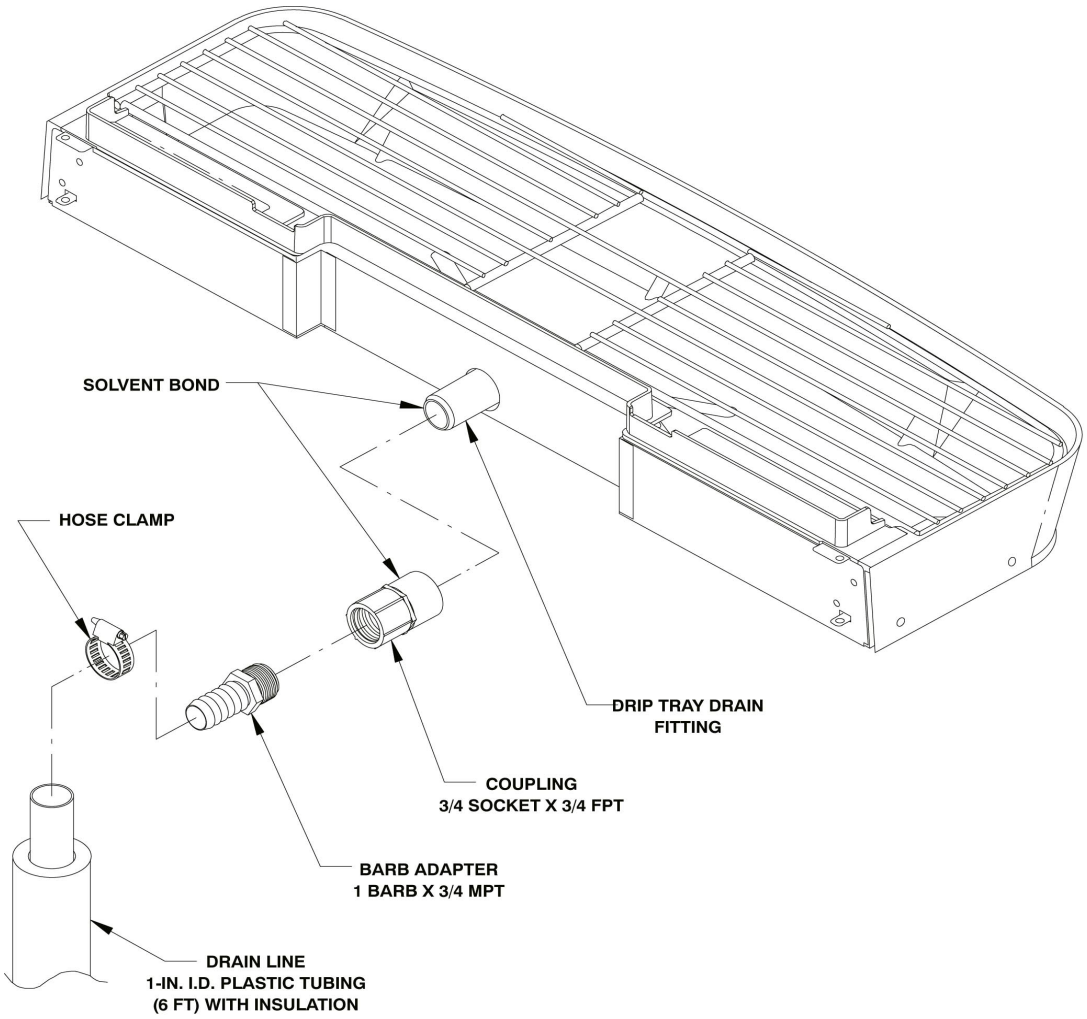

Figure 5. Drip Tray Drain Assembly

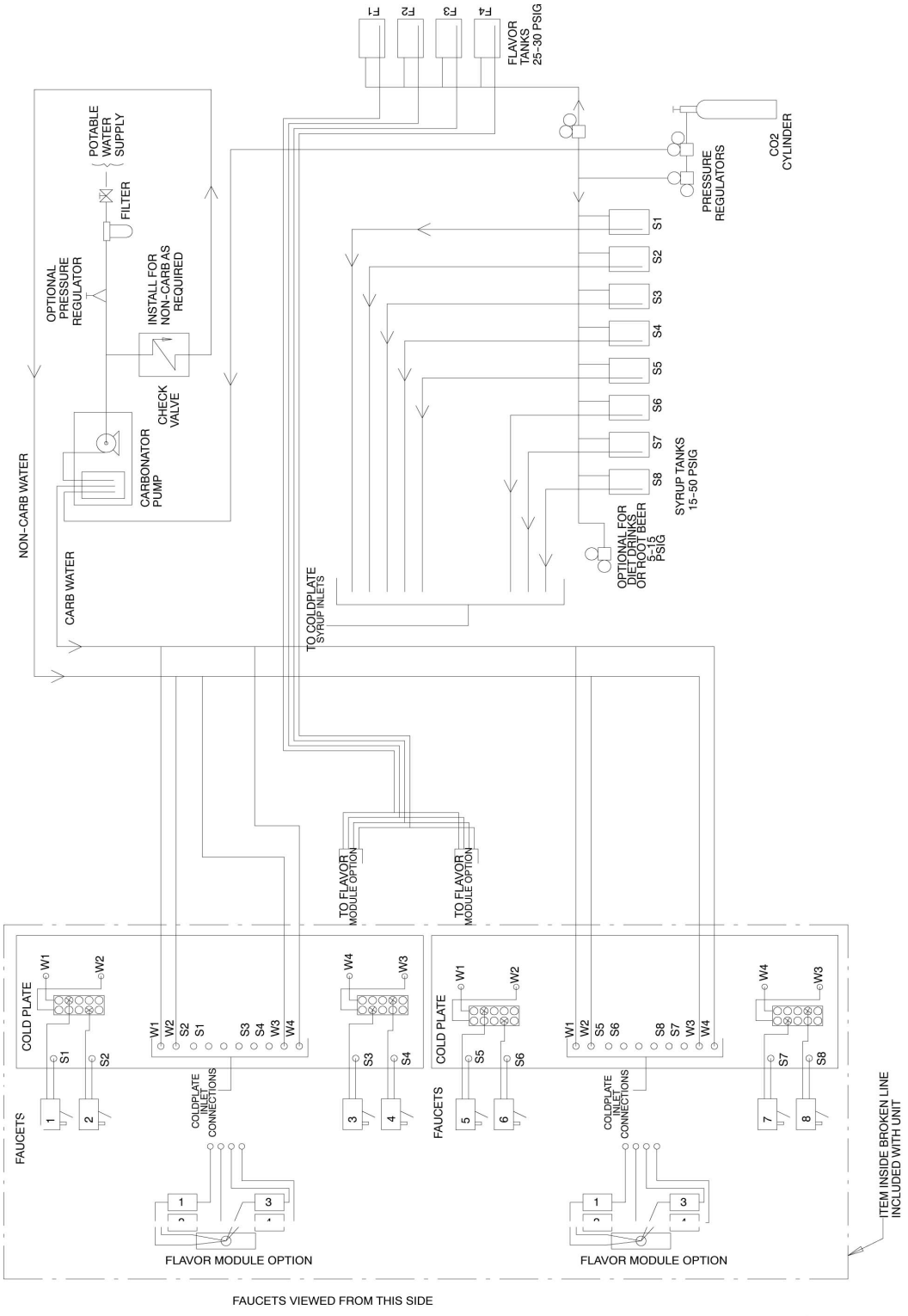

Figure 6. Flow Diagram (BC Model with Eight Beverage Faucets)

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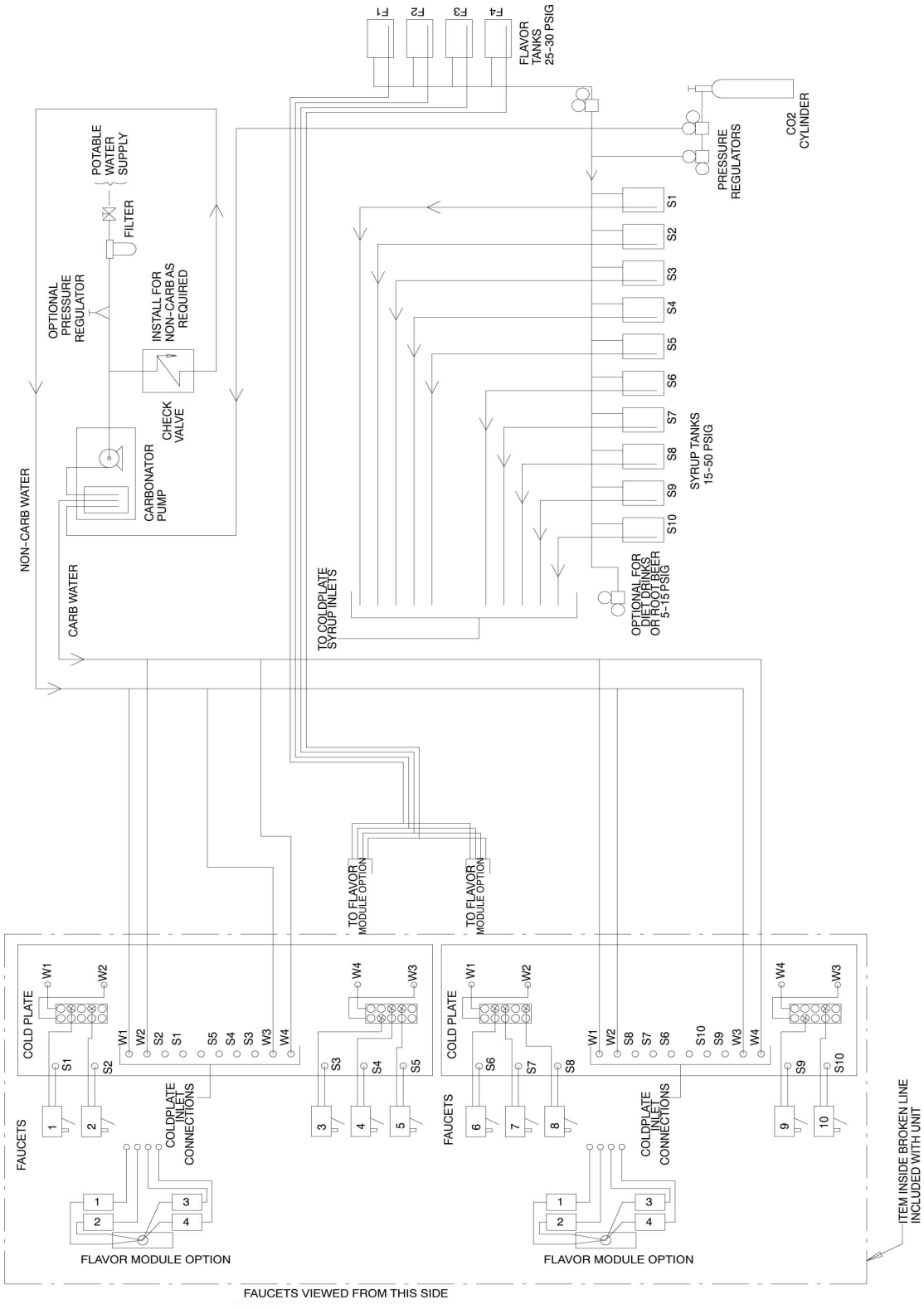

Figure 7. Flow Diagram (B Models with Ten Beverage Faucets)

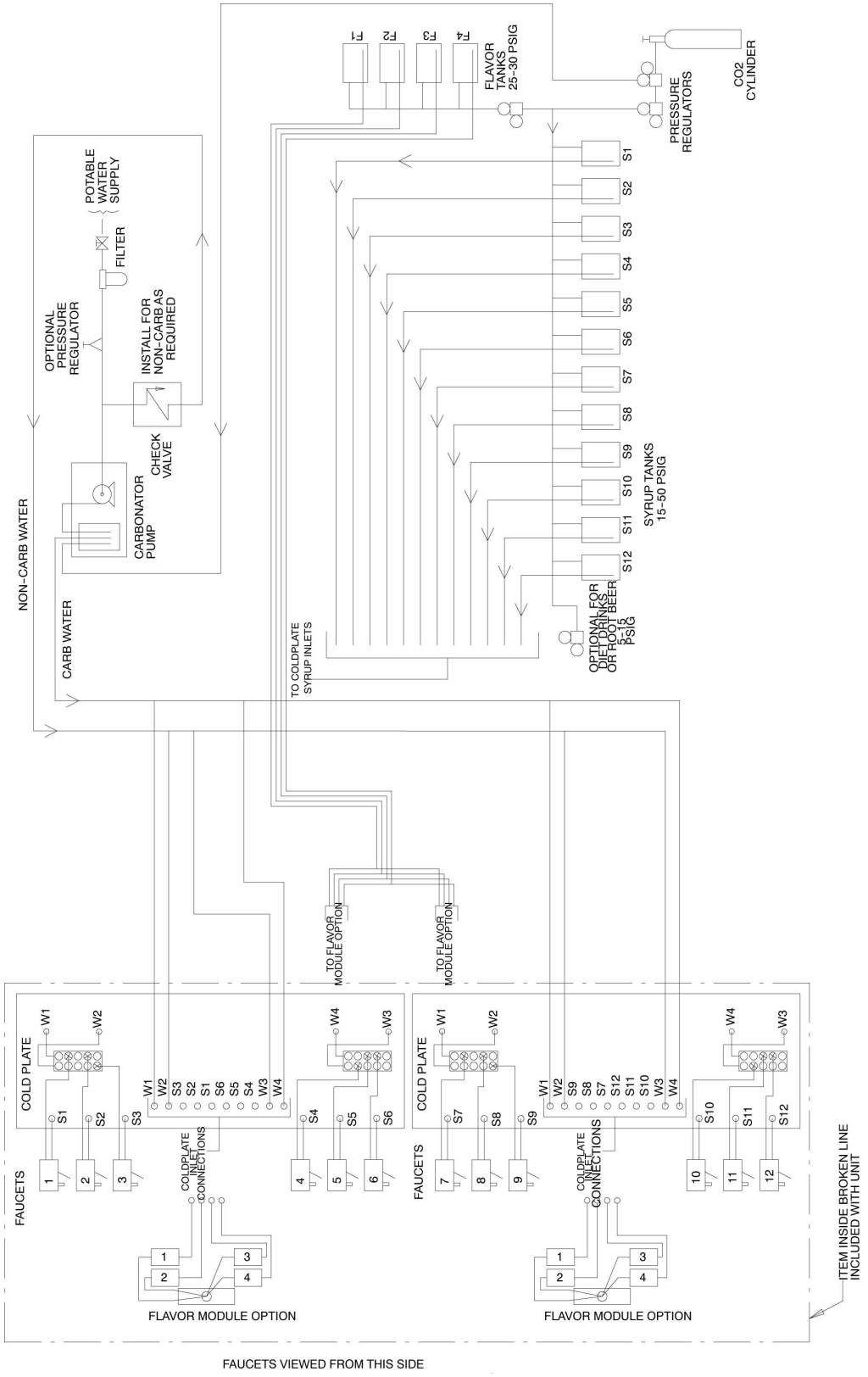

Figure 8. Flow Diagram (BC Models with Twelve Beverage Faucets)

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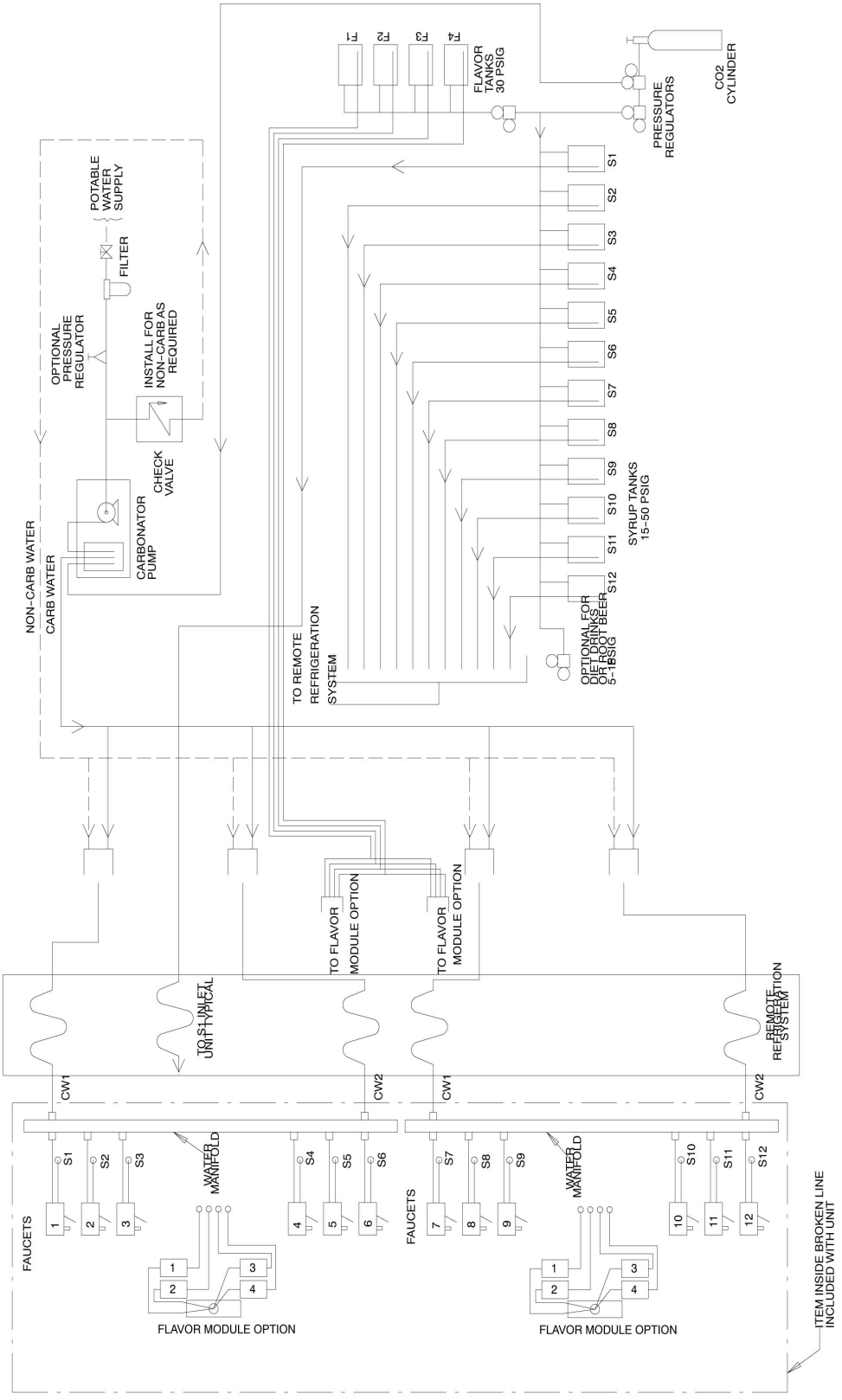

Figure 9. Flow Diagram (B Models with Twelve Beverage Faucets)

TROUBLESHOOTING

IMPORTANT: Only qualified personnel should service internal components or electrical wiring.

⚠ WARNING:
If repairs are to be made to a product system, remove quick disconnects from the applicable product tank, then relieve the system pressure before proceeding. If repairs are to be made to the CO2 system, stop dispensing, shut off the CO2 supply, then relieve the system pressure before proceeding. If repairs are to be made to the refrigeration system, make sure electrical power is disconnected from the unit.

Should your unit fail to operate properly, check that there is power to the unit and that the hopper containsice. If the unit does not dispense, check the following chart under the appropriate symptoms to aid in locating the defect.

Trouble	Probable Cause
BLOWN FUSE OR CIRCUIT BREAKER.	A. . Short circuit in wiring. B. Defective gate solenoid. C. Defective agitator motor.
GATE DOES NOT OPEN. AGITATOR DOES NOT TURN.	A. No power. B. Bent depressor plate (does not actuate switch). C. Defective dispensing switch.
GATE DOES NOT OPEN OR IS SLUGGISH. AGITATOR TURNS.	A. Defective gate solenoid B. Excessive pressure against gate slide. C. Defective Rectifier.
ICE DISPENSES CONTINUOUSLY.	A. Stuck or bent depressor plate (does not release switch). B. Defective dispensing switch. C. Improper switch installation.
SLUSHY ICE. WATER IN HOPPER.	A. Blocked drain. B. Unit not level. C. Poor ice quality due to water quality orice maker problems. D. Improper use of flaked ice.
BEVERAGES DO NOT DISPENSE.	A. No 24 volt power to faucets. B. No CO2 pressure.
BEVERAGES TOO SWEET.	A. Carbonator not working. B. No CO2 pressure in carbonator. C. Faucet brix requires adjusting.
BEVERAGE NOT SWEET ENOUGH	A. Empty syrup tank B. Faucet brix requires adjusting.
BEVERAGES NOT COLD (UNITS WITH BUILT-IN COLD PLATE).	A. Unit standing with no ice in hopper -- no ice in cold plate cabinet.

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Trouble	Probable Cause
FLAVOR SYRUPS DO NOT DISPENSE	A. No 24 volt power to PC board. B. No CO2 pressure. C. Empty syrup tank. D. Kinked tubing. E. Clogged inner nozzle. F. Defective PC board. G. Defective harness from keypad. H. Defective Flow control. I. Defective solenoid harness. J. Defective keypad.
FLAVOR DISPENSES FOR MORE THAN1SEC	A. Dip switch settings on control board incorrect. B. PC board defective. C. Defective flow control.
FLAVOR DISPENSES MORE THAN .5 OZ	A. Dip switch settings on control board incorrect. B. Flow control incorrectly set. C. PC board defective. D. Defective flow control.

Contact your local syrup or beverage equipment distributor for additional information and troubleshooting of beverage system.

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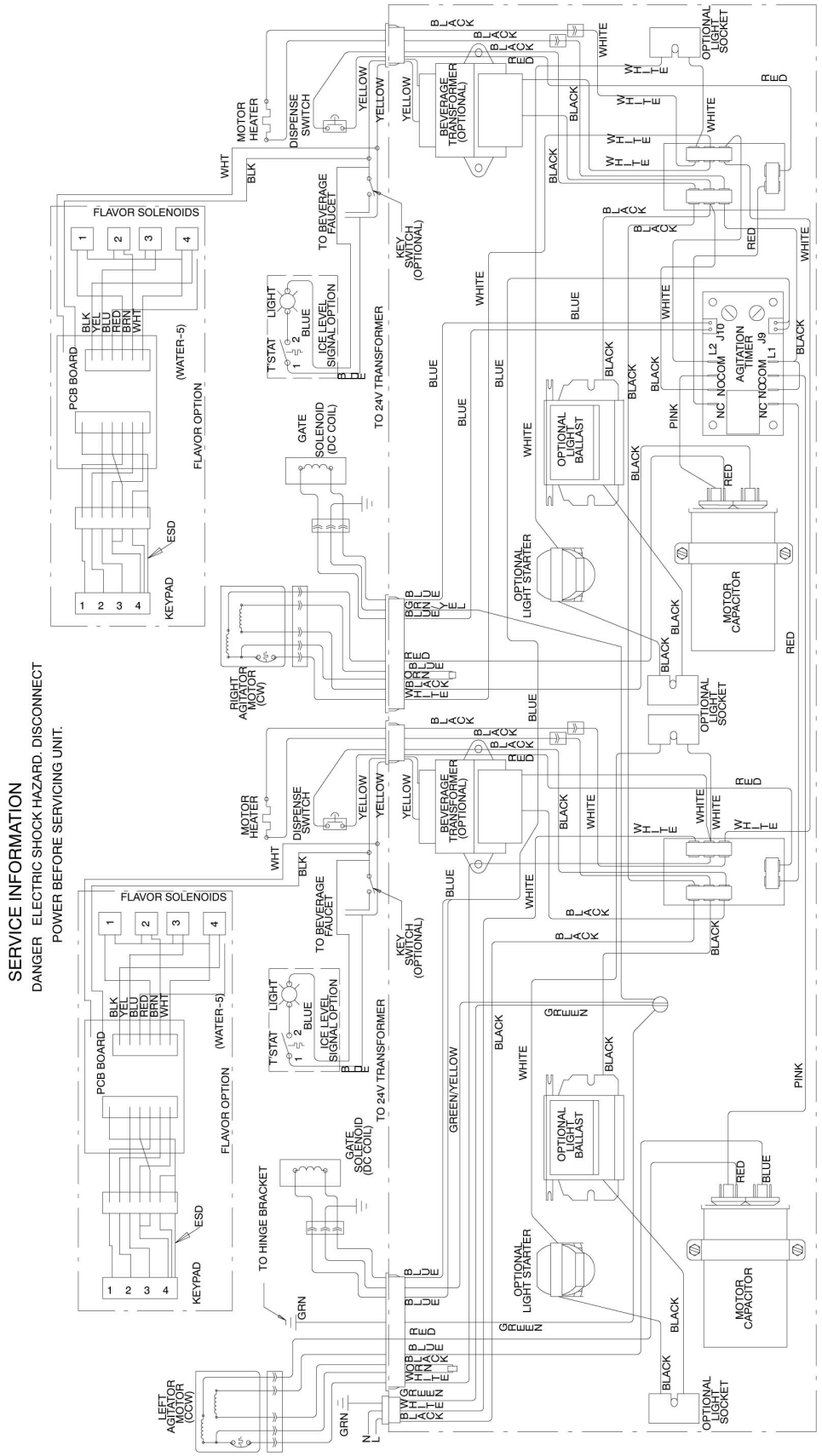

Figure 10. Wiring Diagram (120 V Unit)

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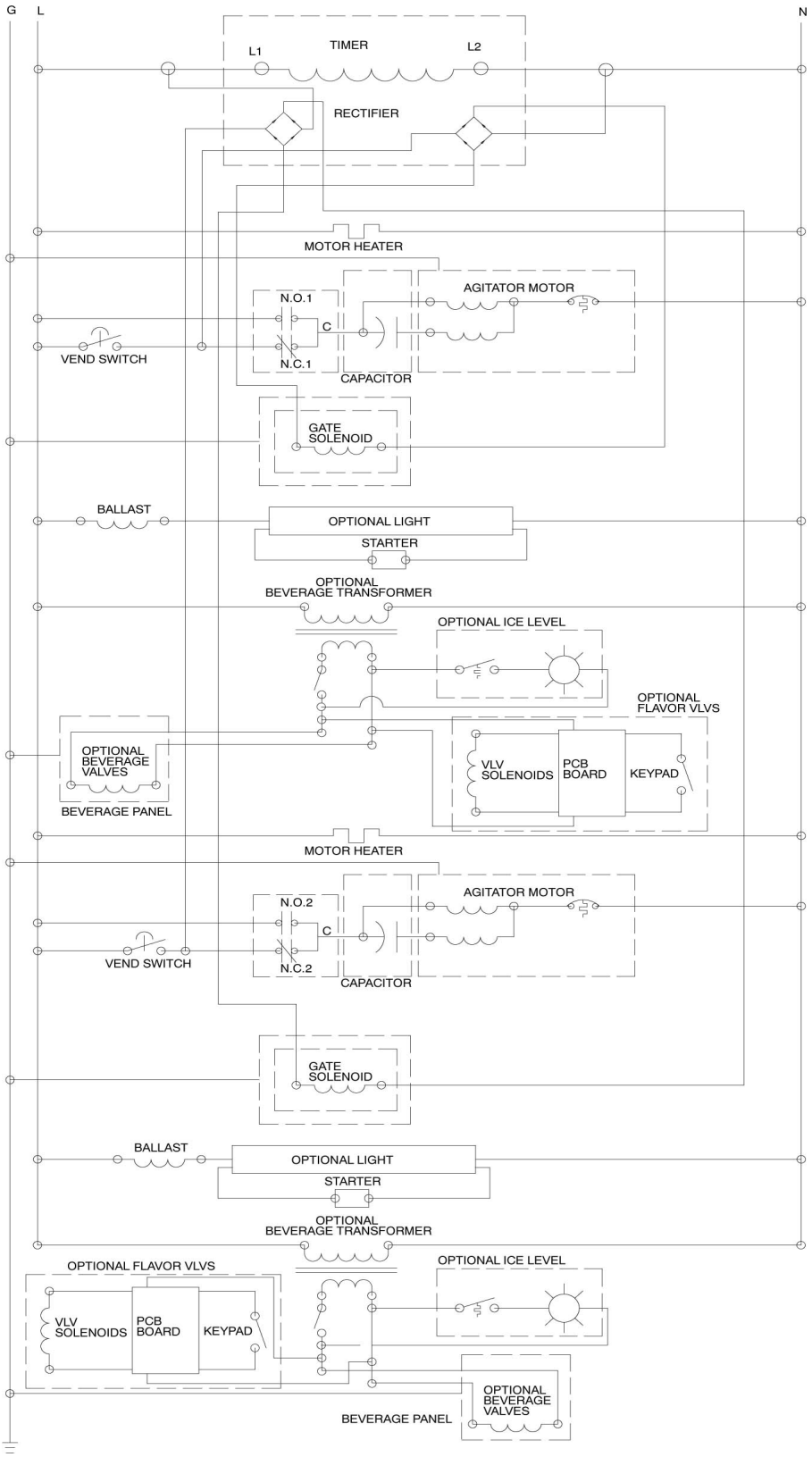

Figure 11. Wiring Schematic (120V Unit)

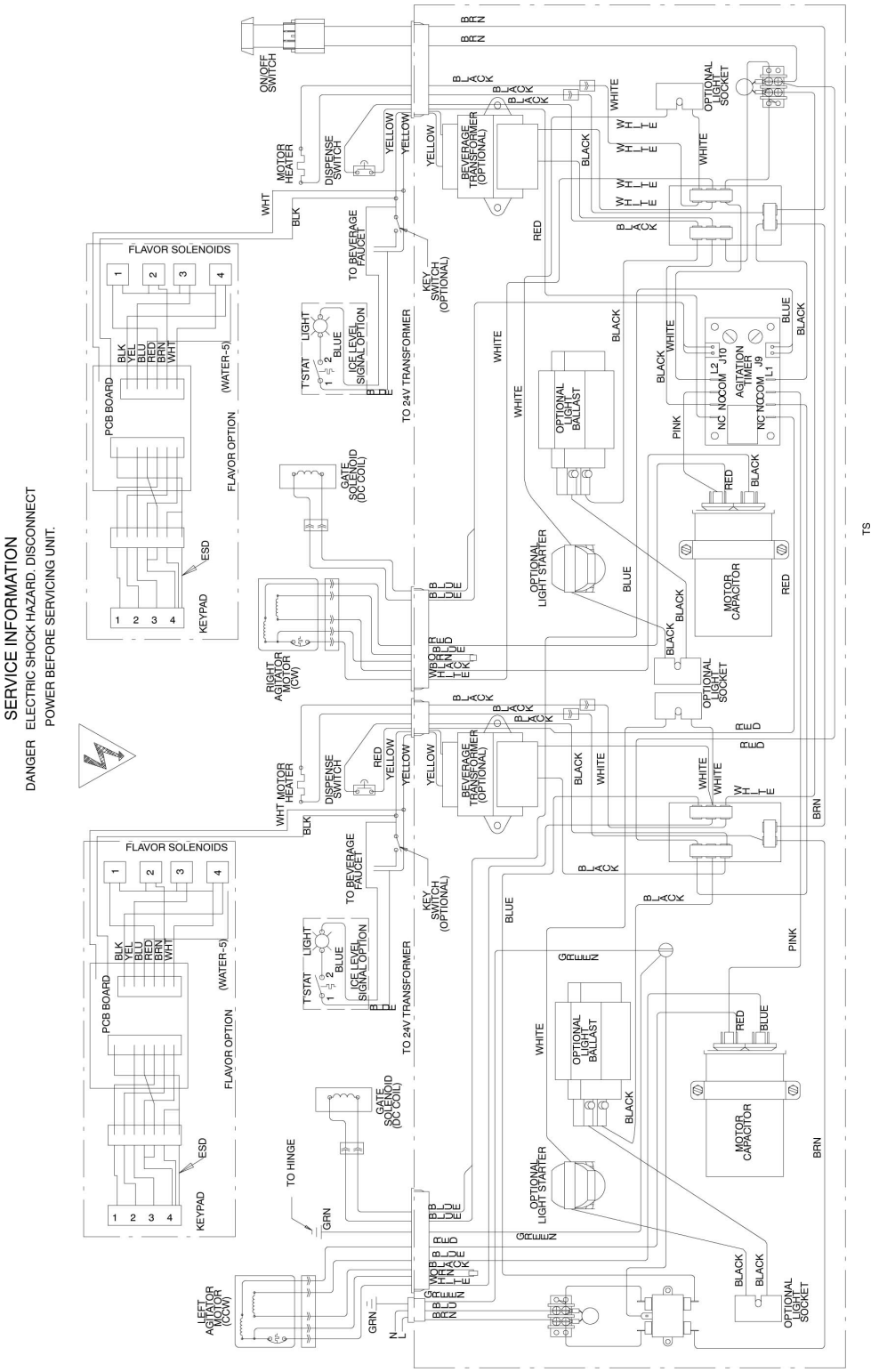

Figure 12. Wiring Diagram (220--240 V Unit)

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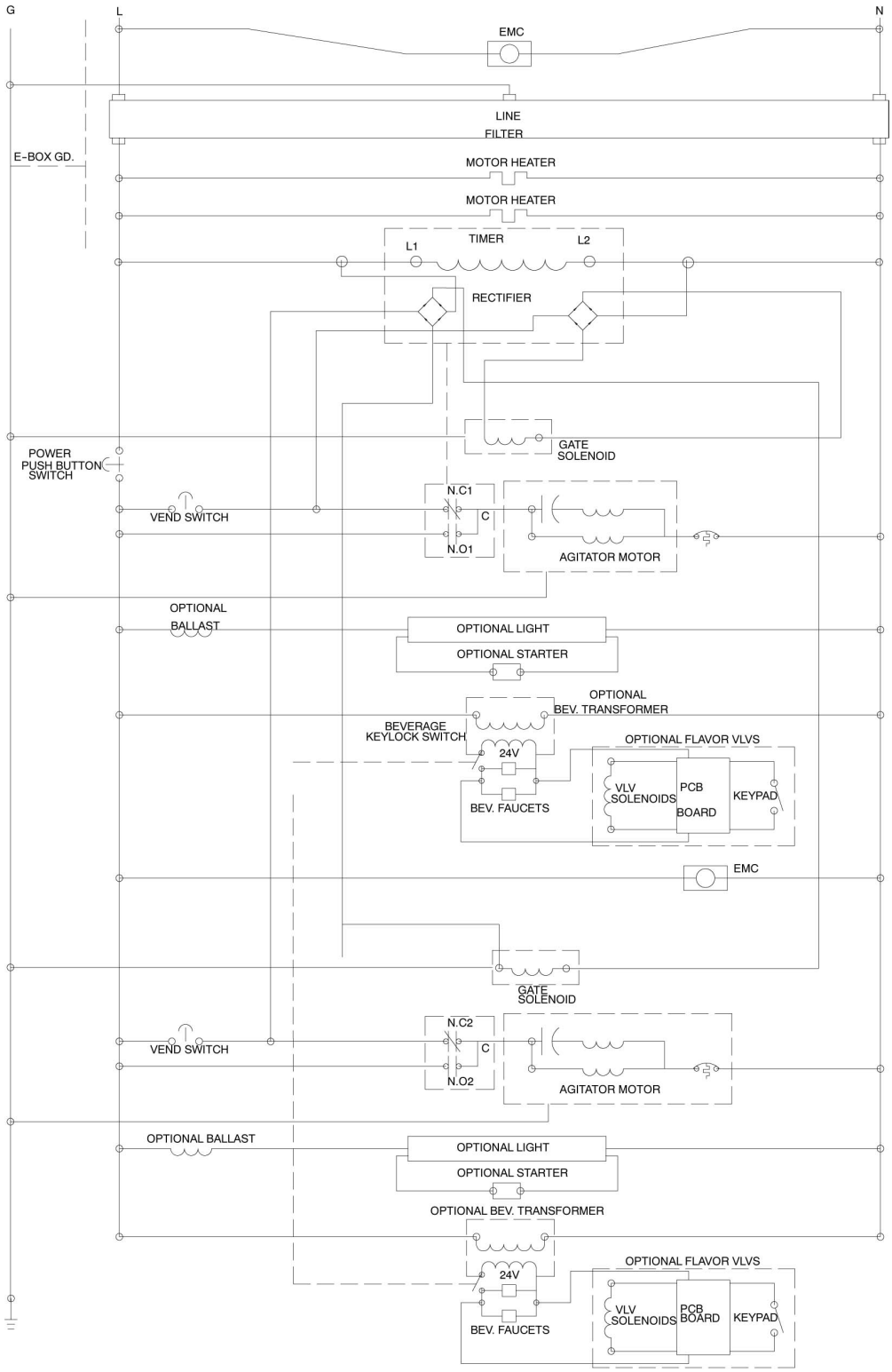
G
L
N
EMC
LINE FILTER
E-BOX GD.
MOTOR HEATER
MOTOR HEATER
TIMER
L1
L2
RECTIFIER
GATE SOLENOID
POWER PUSH BUTTON SWITCH
VEND SWITCH
N.C1
C
N.O1
AGITATOR MOTOR
OPTIONAL BALLAST
OPTIONAL LIGHT
OPTIONAL STARTER
OPTIONAL BEV. TRANSFORMER
BEVERAGE KEYLOCK SWITCH
24V
OPTIONAL FLAVOR VLVS
VLV SOLENOIDS
PCB BOARD
KEYPAD
BEV. FAUCETS
EMC
GATE SOLENOID
VEND SWITCH
N.C2
C
N.O2
AGITATOR MOTOR
OPTIONAL BALLAST
OPTIONAL LIGHT
OPTIONAL STARTER
OPTIONAL BEV. TRANSFORMER
24V
OPTIONAL FLAVOR VLVS
VLV SOLENOIDS
PCB BOARD
KEYPAD
BEV. FAUCETS

Figure 13.

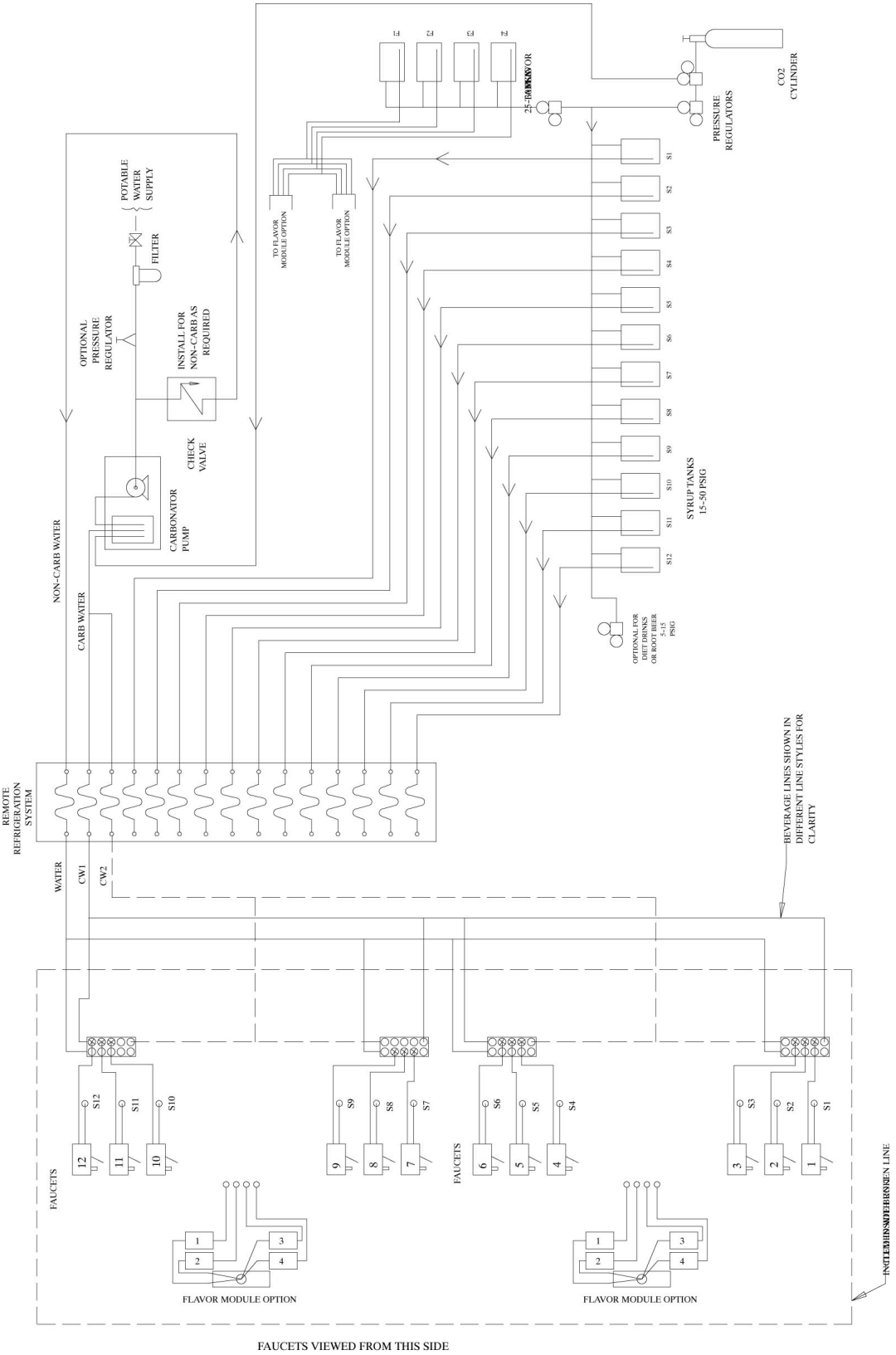

Figure 14. Wiring Schematic (220--240 V Unit)

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